

Name: \_\_\_\_\_

### p1103: Factoring with box when $a = \text{prime}$ (v1)

#### Example

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

#### Question 1

Use the box to factor  $3x^2 + 31x + 56$ .

*	x	
3x	$3x^2$	
		56

ANSWER:

**Question 2**

Use the box to factor  $5x^2 - 3x - 14$ .

*	x	
5x	$5x^2$	
		-14

ANSWER:

**Question 3**

Use the box to factor  $7x^2 - 61x + 40$ .

*		

ANSWER:

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### p1103: Factoring with box when $a = \text{prime}$ (v2)

#### Example

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

#### Question 1

Use the box to factor  $3x^2 + 26x + 16$ .

*	x	
3x	$3x^2$	
		16

ANSWER:

**Question 2**

Use the box to factor  $7x^2 - 19x - 6$ .

*	x	
7x	$7x^2$	
		-6

ANSWER:

**Question 3**

Use the box to factor  $5x^2 - 14x + 8$ .

*		

ANSWER:

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### p1103: Factoring with box when $a = \text{prime}$ (v3)

#### Example

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

#### Question 1

Use the box to factor  $3x^2 + 17x + 20$ .

*	x	
3x	$3x^2$	
		20

ANSWER:

**Question 2**

Use the box to factor  $5x^2 + 37x - 72$ .

*	x	
5x	$5x^2$	
		-72

ANSWER:

**Question 3**

Use the box to factor  $7x^2 - 72x + 81$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v4)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $7x^2 + 47x + 30$ .

*	x	
7x	$7x^2$	
		30

ANSWER:

**Question 2**Use the box to factor  $3x^2 - 14x - 49$ .

*	x	
3x	$3x^2$	
		-49

ANSWER:

**Question 3**Use the box to factor  $5x^2 - 48x + 27$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v5)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $5x^2 + 39x + 28$ .

*	x	
5x	$5x^2$	
		28

ANSWER:

**Question 2**Use the box to factor  $3x^2 + 16x - 64$ .

*	x	
3x	$3x^2$	
		-64

ANSWER:

**Question 3**Use the box to factor  $7x^2 - 32x + 16$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v6)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $3x^2 + 17x + 20$ .

*	x	
3x	$3x^2$	
		20

ANSWER:

**Question 2**

Use the box to factor  $5x^2 + 12x - 9$ .

*	x	
5x	$5x^2$	
		-9

ANSWER:

**Question 3**

Use the box to factor  $7x^2 - 52x + 21$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v7)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $5x^2 + 43x + 56$ .

*	x	
5x	$5x^2$	
		56

ANSWER:

**Question 2**Use the box to factor  $3x^2 - 17x - 56$ .

*	x	
3x	$3x^2$	
		-56

ANSWER:

**Question 3**Use the box to factor  $7x^2 - 37x + 36$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v8)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $7x^2 + 22x + 16$ .

*	x	
7x	$7x^2$	
		16

ANSWER:

**Question 2**Use the box to factor  $5x^2 + 16x - 16$ .

*	x	
5x	$5x^2$	
		-16

ANSWER:

**Question 3**Use the box to factor  $3x^2 - 28x + 49$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v9)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $7x^2 + 44x + 45$ .

*	x	
7x	$7x^2$	
		45

ANSWER:

**Question 2**

Use the box to factor  $3x^2 - 8x - 35$ .

*	x	
3x	$3x^2$	
		-35

ANSWER:

**Question 3**

Use the box to factor  $5x^2 - 21x + 18$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v10)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $7x^2 + 33x + 20$ .

*	x	
7x	$7x^2$	
		20

ANSWER:

**Question 2**

Use the box to factor  $3x^2 - x - 24$ .

*	x	
3x	$3x^2$	
		-24

ANSWER:

**Question 3**

Use the box to factor  $5x^2 - 23x + 24$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v11)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $5x^2 + 34x + 45$ .

*	x	
5x	$5x^2$	
		45

ANSWER:

**Question 2**Use the box to factor  $7x^2 - 43x - 42$ .

*	x	
7x	$7x^2$	
		-42

ANSWER:

**Question 3**Use the box to factor  $3x^2 - 28x + 49$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v12)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $5x^2 + 34x + 24$ .

*	x	
5x	$5x^2$	
		24

ANSWER:

**Question 2**Use the box to factor  $7x^2 + 60x - 27$ .

*	x	
7x	$7x^2$	
		-27

ANSWER:

**Question 3**Use the box to factor  $3x^2 - 13x + 12$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v13)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $7x^2 + 41x + 30$ .

*	x	
7x	$7x^2$	
		30

ANSWER:

**Question 2**

Use the box to factor  $5x^2 - 6x - 8$ .

*	x	
5x	$5x^2$	
		-8

ANSWER:

**Question 3**

Use the box to factor  $3x^2 - 32x + 64$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v14)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $3x^2 + 31x + 36$ .

*	x	
3x	$3x^2$	
		36

ANSWER:

**Question 2**

Use the box to factor  $7x^2 - 12x - 4$ .

*	x	
7x	$7x^2$	
		-4

ANSWER:

**Question 3**

Use the box to factor  $5x^2 - 29x + 20$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v15)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $3x^2 + 26x + 16$ .

*	x	
3x	$3x^2$	
		16

ANSWER:

**Question 2**Use the box to factor  $7x^2 + 33x - 10$ .

*	x	
7x	$7x^2$	
		-10

ANSWER:

**Question 3**Use the box to factor  $5x^2 - 29x + 20$ .

*		

ANSWER:

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### p1103: Factoring with box when $a = \text{prime}$ (v16)

#### Example

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

#### Question 1

Use the box to factor  $3x^2 + 23x + 40$ .

*	x	
3x	$3x^2$	
		40

ANSWER:

**Question 2**Use the box to factor  $7x^2 - 31x - 20$ .

*	x	
7x	$7x^2$	
		-20

ANSWER:

**Question 3**Use the box to factor  $5x^2 - 19x + 18$ .

*		

ANSWER:

Name: \_\_\_\_\_

**p1103: Factoring with box when  $a = \text{prime}$  (v17)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $5x^2 + 33x + 40$ .

*	x	
5x	$5x^2$	
		40

ANSWER:

**Question 2**Use the box to factor  $7x^2 + 26x - 45$ .

*	x	
7x	$7x^2$	
		-45

ANSWER:

**Question 3**Use the box to factor  $3x^2 - 19x + 20$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v18)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	$3x$	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $5x^2 + 14x + 8$ .

*	x	
5x	$5x^2$	
		8

ANSWER:

**Question 2**Use the box to factor  $7x^2 - 47x - 14$ .

*	x	
7x	$7x^2$	
		-14

ANSWER:

**Question 3**Use the box to factor  $3x^2 - 11x + 10$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v19)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $3x^2 + 29x + 40$ .

*	x	
3x	$3x^2$	
		40

ANSWER:

**Question 2**Use the box to factor  $5x^2 - 36x - 81$ .

*	x	
5x	$5x^2$	
		-81

ANSWER:

**Question 3**Use the box to factor  $7x^2 - 64x + 64$ .

*		

ANSWER:

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**p1103: Factoring with box when  $a = \text{prime}$  (v20)**

**Example**

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

**Question 1**

Use the box to factor  $5x^2 + 43x + 24$ .

*	x	
5x	$5x^2$	
		24

ANSWER:

**Question 2**Use the box to factor  $3x^2 + 11x - 42$ .

*	x	
3x	$3x^2$	
		-42

ANSWER:

**Question 3**Use the box to factor  $7x^2 - 64x + 64$ .

*		

ANSWER: